ISSN 0355-3140

Scandinavian Journal of Work, Environment & Health

Volume 23

1997

Contents

Published by

Finnish Institute of Occupational Health, Finland
National Institute of Occupational Health, Denmark
National Institute of Occupational Health, Norway
National Institute for Working Life, Sweden

Address: Topeliuksenkatu 41 a A, FIN-00250 Helsinki, Finland

Subscription for 1997 (6 regular issues plus supplements and special issue): FIM 800.00 surface mail to Scandinavian countries, FIM 900.00 surface mail to other countries, FIM 150.00 surcharge for air mail

Scandinavian Journal of Work, Environment & Health

Editor in chief: Sven Hernberg, Helsinki
Assistant editor in chief: Mikko Härmä, Helsinki
Technical editor: Georgianna Oja, Tampere
Editorial secretary: Maj-Britt Vääriskoski, Helsinki

Co-editors: Ib Andersen, Copenhagen;
Bengt Knave, Stockholm; and Tor Norseth, Oslo

Address: Topeliuksenkatu 41 aA, FIN-00250 Helsinki, Finland

Telephone: +358-(0)9- 47 471 (editors),
+358-(0)9- 474 7694 (business office), and +358-(0)3- 260 8644 (redactory office)

Telefax: +358-(0)9- 878 3326 (editors and business office) and +358-(0)3- 260 8615 (redactory office)

E-mail:
sven.hernberg@sgh.pp.fi
mikko.harma@occuphealth.fi
georgianna.oja@occuphealth.fi
maj-britt.vaariskoski@occuphealth.fi

WWW home page: http://paja.occuphealth.fi/sjweh

Bank: Merita Bank, Tukholmankatu 2,
FIN-00250 Helsinki, Finland (account number 226218-84276)

Subscription for 1997 (6 regular issues plus supplements):
FIM 900.00 surface mail to Scandinavian countries,
FIM 1000.00 surface mail to other countries, FIM 150.00 surcharge for air mail.
Please send subscriptions to the Editorial Secretary, Maj-Britt Vääriskoski, at the address above.

Claims: The Journal cannot assume responsibility for replacing undelivered or damaged issues unless notified no later than six months following the month of publication.

Printed in Finland by Vammalan Kirjapaino Oy, 1997

Editorial Board

Torbjörn Åkerstedt, Stockholm
Anders Ahlbom, Stockholm
Antero Aitio, Helsinki
Bengt Arnetz, Stockholm
Gunnar Aronsson, Stockholm
Olav Axelson, Linköping
Lars Barregård, Göteborg
Ulf Bergqvist, Stockholm
Jens Peter Bonde, Århus
Hanne Christensen, Copenhagen
Erik Dybing, Oslo
Christer Edling, Uppsala
Wijnand Eduard, Oslo
Carl Gustaf Elinder, Stockholm
Birgitta Floderus, Stockholm
Leif Gjerstad, Oslo
Finn Gyntelberg, Copenhagen
Tari Haahtela, Helsinki
Mats Hagberg, Göteborg
Lars Hagmar, Lund
Timo Hakulinen, Helsinki
Rolf Hanoa, Oslo
Maila Hietanen, Helsinki
Gunnar Hillerdal, Stockholm
Bjørn Hilt, Trondheim
Erik Holst, Copenhagen
Pekka Huuhtanen, Helsinki
Anders Iregren, Stockholm
Bente R Jensen, Copenhagen
Kurt Jørgensen, Copenhagen
Bengt Järvholm, Umeå
Raija Kalimo, Helsinki
Lasse Kanerva, Helsinki
Antti Karjalainen, Helsinki
Timo Kauppinen, Helsinki
Åsa Kilbom, Stockholm
Anders Kjellberg, Stockholm
Helge Kjuus, Oslo
Stein Knardahl,Oslo
Tage S Kristensen, Copenhagen
Sverre Langård, Oslo
Marja-Liisa Lindbohm, Helsinki
Kari Lindström, Helsinki
Per Lundberg, Stockholm
Ulf Lundberg, Stockholm
Ritva Luukkonen, Helsinki
Elsebeth Lynge, Copenhagen
Per Malmberg, Stockholm
Antti Malmivaara, Helsinki
Lars Mølhave, Århus
Gunnar Nordberg, Umeå
Henrik Nordman, Helsinki
Hannu Norppa, Helsinki
Jørn Olsen, Århus
Timo Partanen, Helsinki
Vilhjálmur Rafnsson, Reykjavik
Kari Reijula, Helsinki
Hilkka Riihimäki, Helsinki
Ragnar Rylander, Göteborg
Kai Savolainen, Kuopio
Thomas Schneider, Copenhagen
Anne Seppälä, Helsinki
Staffan Skerfving, Lund
Jukka Starck, Helsinki
Erkki O Terho, Turku
Töres Theorell, Stockholm
Antti Tossavainen, Helsinki
Harri Vainio, Lyon (France)
Eira Viikari-Juntura, Helsinki
Eva Vingård, Stockholm
Nina K Vøllestad, Oslo
Jan Wahlberg, Stockholm
Stig Wall, Umeå
Arne Wennberg, Stockholm

International Advisory Board

Ursula Ackermann-Liebrich, Basel
Thomas Armstrong, Ann Arbor, MI
Pier Alberto Bertazzi, Milan
Aaron Blair, Bethesda, MD
Paolo Boffetta, Lyon
Alex Burdorf, Rotterdam
David Coggon, Southampton
Pietro Comba, Rome
Edward A Emmett, Philadelphia, PA
William E Halperin, Atlanta, GA
Denis Hémon, Paris
Manolis Kogevinas, Barcelona
David Koh, Singapore
Antonio Mutti, Parma
Toshiteru Okubo, Kitakyushu
Stephen Olenchock, Marshfield, WI
Choon-Nam Ong, Singapore
Neil Pearce, Wellington
Harry Roels, Brussels
Roger Rosa, Cincinnati, OH
Johannes Siegrist, Düsseldorf
Barbara Silverstein, Olympia, WA
Gilles Theriault, Montréal
Kate Venables, London
Stephen Watt, Aberdeen

The *Scandinavian Journal of Work, Environment & Health* is registered with the Copyright Clearance Center in the United States. Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted to libraries and other users registered with the Center's Transactional Reporting Service, provided that the base fee of USD 1.00 per copy, plus USD 0.25 per page, is paid directly to the Copyright Center, 222 Rosewood Drive, Danvers, MA 01923, USA. For those organizations that have been granted photocopy license by CCC, a separate system of payment has been granted. The fee code for users of the Transactional Reporting Service is: 0355-3140/97 USD 1.00 + .25.

Contents

Volume 23, number 1, February 1997

Editorial

1 Lead and cancer — association or causation? *H Vainio*

Reviews

5 Need for a European approach to the effects of extremely low-frequency electromagnetic fields on cancer *ELF-EMF European Feasibility Study Group*

Original articles

15 Mortality of Italian lead smelter workers *P Cocco, F Hua, P Boffetta, P Carta, C Flore, V Flore, A Onnis, GF Picchiri, D Colin*

24 Cumulative lead exposure in relation to mortality and lung cancer morbidity in a cohort of primary smelter workers *N-G Lundström, G Nordberg, V Englyst, L Gerhardsson, L Hagmar, T Jin, L Rylander, S Wall*

31 Blood cadmium as an indicator of dose in a long-term follow-up of workers previously exposed to cadmium *L Järup, B Persson, C-G Elinder*

37 Elevated serum levels of pantropic p53 proteins in chromium workers *T Hanaoka, Y Yamano, N Katsuno, J Kagawa, S Ishizu*

41 Fibrosis of the lung and pleura and long-term exposure to wollastonite *HO Koskinen, HL Nordman, AJ Zitting, HT Suoranta, SL Anttila, OSA Taikina-aho, RA Luukkonen*

48 Relationship between asbestos bodies in sputum and the number of specimens *F Sulotto, E Capellaro, A Chiesa, S Villari, S Bontempi, G Scansetti*

54 Effects of work-related stress reduction on depressive symptoms among Japanese blue-collar workers *N Kawakami, S Araki, M Kawashima, T Masumoto, T Hayashi*

Short communications

60 Subjective symptoms among motorcycling traffic policemen *SM Mirbod, R Inaba, H Iwata*

Commentaries

64 On the epidemiologic notion of confounding and confounder identification *M Nurminen*

Letters to the editor

69 The sex ratio of offspring sired by men exposed to wood preservatives contaminated by dioxin *WH James*

Meeting reports

70 ICOH'96 — 25th international congress on occupational health *A Talvi*

Book reviews

74 Linkage methods for environment and health analysis: general guidelines

74 Update on benzene: advances in occupational medicine & rehabilitation

76 Causes of death in the workplace

77 ***Noted elsewhere***

78 ***News***

79 ***Announcements***

80 ***Amendments and corrections***

Volume 23, number 2, April 1997

Editorial

81 Asbestos — a continuing concern *A Karjalainen*

Reviews

83 Surveillance and intervention studies on respiratory cancers in asbestos-exposed workers *E Merler, E Buiatti, H Vainio*

93 Asbestos, asbestosis, pleural plaques and lung cancer *G Hillerdal, DW Henderson*

Original articles

104 A meta-analysis of epidemiologic studies of lung cancer in welders *JJ Moulin*

114 Terpene exposure and respiratory effects among workers in Swedish joinery shops *KA Eriksson, JO Levin, T Sandström, K Lindström-Espeling, G Lindén, NL Stjernberg*

121 Sickness absence from back pain, psychosocial work characteristics and employment grade among office workers *H Hemingway, MJ Shipley, S Stansfeld, M Marmot*

130 Associations between self-rated psychosocial work conditions and musculoskeletal symptoms and signs *A Toomingas, T Theorell, H Michélsen, R Nordemar, Stockholm MUSIC I Study Group*

140 Assessing agreement between two job-exposure matrices AP Hawkes, JR Wilkins III

Short communications

149 Asthma in patients with farmer's lung during a five-year follow-up *JI Kokkarinen, HO Tukiainen, EO Terho*

Commentaries

152 "Significant-itis" — an obsession with the P-value *K-S Chia*

Book reviews

155 Ergonomics abstracts on CD-ROM 1996: using clearview for Windows. Version 2.4

156 ***Noted elsewhere***

157 ***News***

158 ***Announcements***

Volume 23, number 3, June 1997

Editorial

161 Evidence-based intervention for musculoskeletal disorders *A Malmivaara*

Reviews

165 Vocational outcome of intervention for low-back pain *WE van der Weide, JHAM Verbeek, MW van Tulder*

Original articles

179 Psychosocial job factors associated with back and neck pain in public transit operators *N Krause, DR Ragland, BA Greiner, SL Syme, JM Fisher*

187 Lung cancer incidence among an Icelandic cohort exposed to diatomaceous earth and cristobalite *V Rafnsson, H Gunnarsdóttir*

193 Short-term effect of hand-arm vibration exposure on tactile sensitivity and manual skill *J-L Thonnard, D Masset, M Penta, A Piette, J Malchaire*

199 Urinary 1-naphthol excretion in the assessment of exposure to creosote in an impregnation facility *PR Heikkilä, M Luotamo, V Riihimäki*

206 Are deficits in the equilibrium system relevant to the clinical investigation of solvent-induced neurotoxicity? *M Niklasson, C Möller, LM Ödkvist, K Ekberg, U Flodin, N Dige, Å Sköldestig*

214 Specific antibodies against methyltetrahydrophthalic anhydride and risk factors for sensitization in occupationally exposed subjects *K Yokota, Y Johyama, K Yamaguchi, Y Fujiki, T Takeshita, K Morimoto*

221 Coronary heart disease mortality among Newfoundland fluorspar miners *PJ Villeneuve, HI Morrison*

Case reports

227 Airway isocyanate-adducts in asthma induced by exposure to hexamethylene diisocyanate *CA Redlich, MH Karol, C Graham, RJ Homer, CF Holm, JA Wirth, MR Cullen*

Commentaries

232 Statistical significance — a misconstrued notion in medical research *M Nurminen*

Book reviews

236 Non-ionizing radiation: proceedings of the Third International Non-Ionizing Radiation Workshop, Baden, Austria, 1996.

238 ***Noted elsewhere***

239 ***Announcements***

Volume 23, number 4, August 1997

Editorial

241 Cardiovascular disease and shift work *T Åkerstedt, A Knutsson*

Reviews

243 Positive and negative evidence of risk factors for back disorders *A Burdorf, G Sorock*

Original articles

257 Shift work, occupation and coronary heart disease over 6 years of follow-up in the Helsinki Heart Study *L Tenkanen, T Sjöblom, R Kalimo, T Alikoski, M Härmä*

266 Trends in mesothelioma incidence and occupational mesotheliomas in Finland in 1960—1995 *A Karjalainen, E Pukkala, K Mattson, L Tammilehto, H Vainio*

271 Chronic bronchitis in farmers *E Melbostad, E Wijnand, P Magnus*

281 Reproductive toxicity of 2-bromopropane in Sprague Dawley rats *IJ Yu, YH Chung, CH Lim, SH Maeng, JY Lee, HY Kim, SJ Lee, CH Kim, TG Kim, CH Lim, JS Park, YH Moon*

289 Toluene-induced hearing loss among rotogravure printing workers *TC Morata, AC Fiorini, FM Fischer, S Colacioppo, KM Wallingford, EF Krieg, DE Dunn, L Gozzoli, MA Padrão, CLG Cesar*

299 Test-retest reliability of an upper-extremity discomfort questionnaire in an industrial population *A Franzblau, DF Salerno, TJ Armstrong, RA Werner*

Letters to the editor

308 Re: "Malignant melanoma among lithographers" by H Nielsen, L Henriksen, JH Olsen. *Scand J Work Environ Health* 1996;22:108—11. *BD Carlton, H Shah*

308 Sex-ratio variation in the Bille settlement *R Fertmann, M Schümann, W Karmaus, S Schmid-Höpfner, M Küppers-Chinnow*

Consensus reports

311 Asbestos, asbestosis, and cancer: the Helsinki criteria for diagnosis and attribution

Book reviews

317 Making safety work — getting management commitment to occupational health and safety

319 ***Noted elsewhere***

320 ***Announcements***

Volume 23, number 5, October 1997

Editorial

321 New vistas in occupational health *P Westerholm*

Reviews

325 Occupational health and safety in national development — the case of Australia *EA Emmet*

Original articles

334 Mortality from cardiovascular diseases and sudden death in ferroalloy plants *Å Hobbesland, H Kjuus, DS Thelle*

342 Mortality from nonmalignant respiratory diseases among male workers in Norwegian ferroalloy plants *Å Hobbesland, H Kjuus, DS Thelle*

351 Respiratory symptoms, across-shift lung function changes and lifetime exposures of welders in New Zealand *D Fishwick, LM Bradshaw, T Slater, N Pearce*

369 Lead concentrations in human plasma, urine and whole blood *IA Bergdahl, A Schütz, L Gerhardsson, A Jensen, S Skerfving*

364 Occupational and personal risk factors for carpal tunnel syndrome in industrial workers *Y Roquelaure, S Mechali, C Dano, S Fanello, F Benetti, D Bureau, J Mariel, Y-H Martin, F Derriennic, D Penneau-Fontbonne*

370 Possible bias from rating behavior when subjects rate both exposure and outcome *A Toomingas, L Alfredsson, Å Kilbom*

378 Job adjustment as a means to reduce sickness absence during pregnancy *K Strand, E Wergeland, T Bjerkedal*

385 Sensitization to industrial enzymes in enzyme research and production *M Vanhanen, T Tuomi, H Nordman, O Tupasela, PC Holmberg, M Miettinen, P Mutanen, M Leisola*

Commentaries

392 Developing national indicators for occupational health *K Takahashi, TC Aw, D Koh, TW Wong, T Kauppinen, P Westerholm*

394 ***Noted elsewhere***

394 ***News***

395 ***Announcements***

400 Amendments and corrections

Volume 23, number 6, December 1997

Editorial

401 A smoke screen to keep the controversy alive *H Vainio, AJ Sasco*

Original articles

403 Predictors of disability retirement *N Krause, J Lynch, GA Kaplan, RD Cohen, DE Goldberg, JT Salonen*

414 Urinary naphthols as an indicator of exposure to naphthalene *G Bieniek*

421 Respiratory symptoms, spirometry and chronic occupational paraquat exposure *N Castro-Gutiérrez, R McConnell, K Andersson, F Pacheco-Antón, C Hogstedt*

428 Respiratory symptoms, pulmonary function and allergy to fur animals among fur farmers and fur garment workers *J Uitti, H Nordman, L Halmepuro, J Savolainen*

435 Deficiencies of the Stockholm vascular grading scale for hand-arm vibration *KT Palmer, DN Coggon*

440 Task-based estimation of past exposures to 60-hertz magnetic and electric fields at an electrical utility *J-E Deadman, G Church, C Bradley, BG Armstrong, G Thériault*

450 Psychosocial correlates of harassment, threats and fear of violence in the workplace *LL Cole, PL Grubb, SL Sauter, NG Swanson, P Lawless*

Short communications

458 Cancer incidence of sulfite pulp workers in Denmark *BA Rix, E Villadsen, E Lynge*

465 ***Noted elsewhere***

467 ***News***

468 ***Announcements***

Volume 23, suppl 1, 1997

1—71 Eleven-year follow-up of aging workers *guest editor K Tuomi*

Editorial

3 Ageing and work — coping with strengths and weaknesses *J Ilmarinen*

Articles

7 Finnish research project on aging workers in 1981—1992 *K Tuomi, J Ilmarinen, M Klockars, C-H Nygård, J Seitsamo, P Huuhtanen, R Martikainen, L Aalto*

12 Perceived work changes between 1981 and 1992 among aging workers in Finland *C-H Nygård, P Huuhtanen, K Tuomi, R Martikainen*

20 Life-style, aging and work ability among active Finnish workers in 1981—1992 *J Seitsamo, J Ilmarinen*

27 Aging and changes in health *J Seitsamo, M Klockars*

36 Changes in stress symptoms and their relationship to changes at work in 1981—1992 among elderly workers in municipal occupations *P Huuhtanen, C-H Nygård, K Tuomi, R Martikainen*

49 Changes in the work ability of active employees over an 11-year period *J Ilmarinen, K Tuomi, M Klockars*

58 Aging, work, life-style and work ability among Finnish municipal workers in 1981—1992 *K Tuomi, J Ilmarinen, R Martikainen, L Aalto, M Klockars*

66 Summary of the Finnish research project (1981—1992) to promote the health and work ability of aging workers *K Tuomi, J Ilmarinen, J Seitsamo, P Huuhtanen, R Martikainen, C-H Nygård, M Klockars*

Volume 23, suppl 2, 1997

1—80 Mortality, morbidity and health selection among metal workers *R-S Koskela*

Volume 23, suppl 3, 1997

1—112 The XII Signe and Ane Gyllenberg symposium: the environmental syndrome — psychosomatic disease experience induced by environmental factors *guest editor S Stenman*

5 ***Preface***

Section 1. *Review articles*

7 Somatization and fashionable diagnoses: illness as a way of life *CV Ford*

17 Chronic fatigue syndrome: a 20th century illness? *S Wessely*

35 Multiple chemical sensitivity: pseudodisease in historical perspective *E Shorter*

43 The message of psychosomatic diseases *E Rechardt*
47 Psychosocial environmental factors and psychosocially mediated effects of physical environmental factors *L Levi*
53 Placebo — the forgotten drug *H Boström*

Section 2. *Clinical reports*
59 Symptoms and differential diagnosis of patients fearing mercury toxicity from amalgam fillings *S Stenman, L Grans*
65 Experiences from the amalgam unit at Huddinge hospital — somatic and psychosomatic aspects *S Langworth*
69 Clinical features of multiple chemical sensitivity *F Levy*
75 Food intolerance and psychosomatic experience *MH Vatn*
79 Unemployment as a disease and diseases of the unemployed *U Janlert*
85 Changes in the health status and health behavior among Finnish adults 1978—1993 *E Lahelma, O Rahkonen, M-A Berg, S Helakorpi, R Prättälä, P Puska, A Uutela*
91 Clinical concepts and dilemmas between disease and averse life events *L Getz*
97 Technological stress: psychophysiological aspects of working with modern information technology *BB Arnetz*

Concluding discussion
105 On the nature and origin of psychosomatic symptoms

Volume 23, suppl 4, 1997

1—72 Future worklife — special issue, in honor of Lennart Levi *guest editor T Theorell*

Preface
5 ***Introduction***

Articles
7 Introductory remarks on social responsibility and the future of the labor market *AL Johansson*
10 The economy and social equity in a period of major technoeconomic change *JF Mustard*
16 How will future worklife influence health? *T Theorell*
23 Empowerment in future worklife *JV Johnson*
28 Migration, ethnocultural diversity, and future worklife: challenges and opportunities *AJ Marsella*
47 In the wake of recession — economic hardship, shame and social disintegration *B Starrin, U Rantakeisu, C Hagquist*
55 Labor participation and job quality policy: requirements for an alternative *R Karasek*
66 Japanese perspective of future worklife *F Kobayashi*